

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PTR SECTION STAFF GUIDANCE

STEEL STORAGE TANK COVER SLOPE AND PONDING

Rule Affected: 30 TAC §290.43(c)

Background:

The first rule revision to stipulate that storage tank covers must be sloped to prevent the collection of water was written in 1967. In 1988, these rules were revised to require tanks be designed and erected so water does not pond anywhere on top of the tank and no area of the storage tank roof have a slope of less than 0.75 inches per foot.

The purpose of the sloped roof requirement is to protect the structural integrity of the tank by preventing significant and prolonged incidents of standing rainwater. Standing water adds unnecessary weight and can lead to external corrosion of the tank cover. External corrosion can allow contaminants to infiltrate the tank and compromise the stored water's quality. Additionally, bolted or welded steel roofs are prone to localized deformation caused by expansion and contraction due to temperature, climatic conditions and human activity. Even walking across a steel roof may cause localized deformation between roof supports which can lead to water ponding, regardless of whether or not the tank was initially designed and constructed with a proper slope.

Guidance:

The PWS must submit a condition assessment of their GST to TROT for review. If the condition of the GST does not look suitable for an approval of a long-term exception request, a temporary exception may be considered to provide the PWS time to make repairs or provide an adequate cover slope. If the GST is found to be in good condition, an exception can be granted for steel tank covers with a roof slope near the minimum slope of 0.75 inches per foot with the following conditions:

1. Within 12 hours following each rain event, the water system staff must inspect the roof to ensure no water ponding has occurred. If ponding has occurred, corrective action must be initiated by the water system operator to remove the excess water from the roof. A record of monitoring and completed corrective actions following rain events must be kept on file for at least two years and made available for review by TCEQ staff upon request;
2. The PWS must conduct visual inspections of the ground storage tank for corrosion and holes on at least an annual basis. The condition of the exterior paint, and any defects such as holes, must be noted and photographed as part of the annual inspection. These inspection records must be kept on file for at least two years and made available for review by TCEQ staff upon request;
3. No breach or opening exists in the roof of the tank; and
4. The potential for water ponding is minor and is not sufficient to cause damage to the exterior coating or surface of the tank.

Finalized and Approved by:

Joel Klumpp, Plan and Technical Review Section Manager _____

If no formal expiration date has been established for this staff guidance, it will remain in effect until superseded or canceled.

Revision History:

Date	Action	Action by
xx/xx/2009	Approved	Elston Johnson
12/05/2012	Revised	David Williams
08/14/2013	Revised	Yadhira Resendez
09/23/2013	Approved	Ada Lichaa
07/20/2016	Revised	Yadhira Resendez
07/27/2016	Approved	Joel Klumpp